

Pathways and Accreditation

Purpose of the Working Group

The purpose of the Pathways and Accreditation Working Group is to define education pathways for students in technical and engineering fields to develop their careers, supported by the removal of all unnecessary constraints that could inhibit their progress on that pathway. The goal is to enable individuals to achieve meaningful employment at their chosen levels, with the real opportunity to resume their career development through further education if they choose to do so.

Background

The Pathways and Accreditation Working Group is one of four working groups at the National Indigenous Engineering Summit addressing the under-representation of indigenous students in engineering-related careers.

Building engineering pathways for Indigenous Australians requires support across all levels of engineering education. Industry, professional bodies, governments, VET sector and higher education providers, all have a role to play in supporting the transition of Indigenous students from secondary education to trades, to paraprofessional programs, and potentially to professionally-accredited engineering programs. Central to this is the definition of those pathways across different levels of awards that can form the basis for on-going consultation and decision making by all stakeholders.

Pathways

In a recent study for the Australian National Engineering Taskforce (Reference 1), a generic engineering pathway was developed from engineering trades to professional engineering. This generic pathway provided a starting point for the development of a more comprehensive representation that was developed by the Working Group as its key output. This output (Reference 2) is too detailed to be depicted in this brief overview (it is available from the Summit website), but the fundamental features of the generic pathway are preserved. That is, it depicts the articulation pathways from completed awards to the next education level.

Especially for progression from trade level programs to the paraprofessional and professional program levels, there may be 'bridges' from one level to the next. 'Bridges' are additional studies required for articulating students to move to the next award level with academic credit (meaning that they do not need to undertake all units of the higher award). As noted by King *et al*, bridges are required 'because the lower level qualification cannot be a simple subset of the higher level qualification if it is intended to meet Engineers Australia's accreditation requirements for entry to the relevant occupation'. It is immediately apparent that the accreditation criteria that are applied to these bridging programs need to be exercised in a manner that removes unnecessary constraints on progression from one level to the next.

Currently, about six percent of all commencing students in engineering degrees are admitted on the basis of a VET award, compared with ten percent across all higher education programs. Of these, approximately only 20 percent complete their degree, so the prospect of completion for Indigenous students is not encouraging. Clearly, not only is great effort required to attract students to the engineering pathway, similar effort is required to support them on their journey on that education pathway. When Indigenous graduates present for membership of Engineers Australia, there is also a need to recognise the nature and extent of their exposure to professional practice that has been achieved during their extended journey.

From this information it is apparent that the definition of a generic education pathway to a professional engineering degree, whilst important, is not the fundamental challenge. Many education providers already have defined pathways that are tailored to the specific programs that they offer; not all providers offer programs at all levels, and there is enormous variety in the manner by which a student can articulate between different providers, as well as between programs. The value of the comprehensive pathway developed by this Working Group is that it provides a reference point for each provider to define pathways specific to its programs. Likewise, employers who sponsor indigenous students will find it helpful when assisting and advising them about potential options for further education, as will Engineers Australia when considering matters of accreditation, membership and registration.

The Journey

With a generic engineering education pathway available to all stakeholders, the major task in relation to pathways becomes that of attracting students to commence their journeys on the pathway, and motivating and empowering them to continue on a journey that is beset with many challenges. The origins of these challenges may be based in education, employment, society or community, as well as personal circumstances. Not the least of these challenges is the alienating language that is often employed by engineering professionals and the associated assumptions that discourage Indigenous students (and others) from their engineering journey.

The Summit Strategy Workshop A - Pathways and Accreditation - will explore the challenges associated with making the journey on the education pathway, primarily (but not only) from the perspectives of industry and the profession. In particular, the proposition that *“a new professional narrative is required to mitigate the professional alienation resulting from deeply embedded and unhelpful assumptions”* will be considered.

References:

1. King R, Dowling D, Godfrey E (2011) *Pathways from VET Awards to Engineering Degrees: a higher education perspective*. Australian National Engineering Taskforce
2. NIES Working Group A (2015) *Engineering Pathways v2.0*, National Indigenous Engineering Summit (available from the Summit website)